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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,063	09/28/2001	Hans Leibold	K 186	4900

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KLAUS J. BACH & ASSOCIATES  
PATENTS AND TRADEMARKS  
4407 TWIN OAKS DRIVE  
MURRYSVILLE, PA 15668

EXAMINER

GREENE, JASON M

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 03/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/967,063

Applicant(s)

LEIBOLD ET AL.

Examiner

Jason M. Greene

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The disclosure is objected to because of the following informalities: In page 6, line 17, the number "6" should be changed to read as the number "16". Appropriate correction is required.

### ***Claim Objections***

3. Claim 9 is objected to because of the following informalities: The word "consist" in line 2 should be changed to read as "consists". Appropriate correction is required.
4. Claim 10 is objected to for reciting the improper Markush group "wherein said ceramic material is one of SiC, A<sub>2</sub>O<sub>3</sub>, Cardierit, and Spinell". The Examiner suggests rewriting the limitation to read as "wherein said ceramic material is selected from the group consisting of SiC, A<sub>2</sub>O<sub>3</sub>, Cardierit, and Spinell".

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7 and 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "rapidly" in claim 7 is a relative term which renders the claim indefinite. The term "rapidly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The indefinite term renders the claimed operating characteristics of the flushing gas control valve indefinite.

Regarding claim 8, the phrase "honeycomb-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by " honeycomb-like "), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

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The term "few" in claim 8 is a relative term which renders the claim indefinite. The term "few" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The indefinite term renders the claimed cross-sections of the passages extending through the dynamic control element indefinite.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Bartling.

Bartling discloses a method for cleaning pipe-shaped filter elements (3) arranged in a housing (2) including a separation wall (5) dividing the housing into a clean gas space (not numbered, upper portion) and a raw gas space (not numbered, lower portion) into which the filter elements extend from the clean gas space through the separation wall, said raw gas space including means (7) for supplying raw gas thereto

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and said clean gas space including an outlet (30) for discharging clean gas (29) therefrom and also a backflushing inlet (31) for supplying backflushing gas (32) to the clean gas space for backflushing the filter elements, said method comprising the steps of supplying, for cleaning said filter element, backflushing gas (32) to said clean gas space through said backflushing inlet, while said outlet (30) is blocked (34) for momentarily forcing the gas in said clean gas space back through said filter elements into said raw gas space thereby dislodging any dust collected on said filter elements in Figs. 1 and 2 and col. 2, line 38 to col. 5, line 28.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shevlin in view of Fisher et al.

With regard to claim 1, Shevlin discloses a method for cleaning pipe-shaped filter elements (40) arranged in a housing (42) including a separation wall (52) dividing the housing into a clean gas space (50) and a raw gas space (48) into which the filter

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elements extend from the clean gas space through the separation wall, said raw gas space including means (44) for supplying raw gas thereto and said clean gas space including an outlet (46) for discharging clean gas therefrom and also a backflushing inlet (68) for supplying backflushing gas to the clean gas space for backflushing the filter elements, said method comprising the steps of supplying, for cleaning said filter element, backflushing gas to said clean gas space through said backflushing inlet for momentarily forcing the gas in said clean gas space back through said filter elements into said raw gas space thereby dislodging any dust collected on said filter elements in Fig. 3 and col. 4, line 40 to col. 5, line 13.

Shevlin does not disclose the outlet being blocked while the backflushing gas is supplied to clean the filter elements.

Fisher et al. discloses a similar method wherein an outlet (3) is blocked (4) while a backflushing gas is supplied (20) to clean the filter elements (12) in Fig. 1 and col. 2, line 14 to col. 3, line 62.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the blocked outlet of Fisher et al. into the method of Shevlin to facilitate the flow of backflushing air through the filter elements, as suggested by Fisher et al. in col. 3, lines 1-9.

With regard to claim 2, Shevlin discloses the backflushing inlet (68) having a backflushing control valve (70) in Fig. 3 and col. 4, line 40 to col. 5, line 13.

Shevlin does not disclose the backflushing inlet including a flap valve arranged between a backflushing control valve and said clean gas space, said method comprising the step of opening said flap valve shortly before said backflushing valve is opened to provide for backflushing of said filter elements.

Fisher et al. discloses a similar method wherein the backflushing inlet includes a flap valve (22) arranged between a backflushing control valve (25) and a clean gas space (not numbered, upper portion of 1), said method comprising the step of opening said flap valve shortly before said backflushing valve is opened to provide for backflushing of said filter elements in Fig. 1 and col. 2, line 14 to col. 3, line 62.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the flap valve of Fisher et al. into the method of Shevlin to provide a secondary control valve to terminate the backflushing in the event that the backflushing control valve sticks open.

10. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shevlin and Fisher et al. as applied to claim 1 above, and further in view of Weber et al.

Shevlin and Fisher et al. do not disclose said backflushing being performed with a backflushing pressure which is higher than the pressure of said raw gas, said backflushing being performed momentarily during the filtering procedure, or said backflushing being performed using gas pulses, wherein said backflushing gas pulses through said filter elements consist mainly of clean hot gas.



Weber et al. discloses a similar method wherein said backflushing is performed with a backflushing pressure which is higher than the pressure of said raw gas, said backflushing being performed momentarily during the filtering procedure, and said backflushing is performed using gas pulses, wherein said backflushing gas pulses through said filter elements consist mainly of clean hot gas (14) in Fig. 1 and col. 4, lines 8-30. Since the backflushing gas is compressed in the compressor (16), one of ordinary skill in the art at the time the invention was made would have expected the backflushing gas to have a pressure higher than the pressure of said raw gas.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the high pressure product gas as the backflushing gas of Weber et al. into the method of Shevlin and Fisher et al. to avoid having to provide an additional compressed air source to generate the backflushing gas.

11. Claims 6-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shevlin in view of European Patent Application EP 0 551 951 A1, Fisher et al., and Eggerstedt.

With regard to claims 6 and 11, Shevlin discloses an arrangement for cleaning pipe-shaped filter elements (40) arranged in a housing (42) with a separation wall (52) dividing the housing into a raw gas space (48) and a clean gas space (50), at least one tubular filter cartridge having a closed end and being mounted in said separation wall so as to extend with its closed end into said raw gas space, the open end of said tubular

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filter cartridge being disposed in said clean gas space, means (44) for supplying raw gas to be cleaned to said raw gas space for passage through said at least one filter cartridge into said clean gas space, an outlet (46) arranged in said clean gas space for discharging the clean gas therefrom, and a flushing gas inlet (68) connected to said clean gas space for supplying backflushing gas to said clean gas space in Fig. 3 and col. 4, line 40 to col. 5, line 13.

Shevlin does not disclose the arrangement including a safety filter element disposed on said at least one filter cartridge in said clean gas space or a flow-dynamic control element having no moving parts disposed in said clean gas outlet which permits passage of the cleaned gases out of said clean gas space but which essentially blocks passage when backflushing gas under increased pressure is admitted to said clean gas space through said flushing gas inlet.

EP 0 551 951 A1 discloses a similar arrangement including a safety filter element (13) disposed on said at least one filter cartridge (17) in said clean gas space, and a housing (12) including a cover arranged in spaced relationship from the separation wall and said safety filters disposed on top of said filter cartridges are engaged between said filter cartridges and said cover in Fig. 1 and col. 4, line 45 to col. 5, line 43.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the safety filter elements of EP 0 551 951 A1 into the arrangement of Shevlin to provide a secondary filter to clean the gas in that event that one of the primary filter elements break, as suggested by EP 0 551 951 A1 in col. 5, lines 7-13.

Fisher et al. discloses a similar arrangement wherein the clean gas outlet (3) is selectively blocked (4) when backflushing gas under increased pressure is admitted to said clean gas space through said flushing gas inlet in Fig. 1 and col. 2, line 14 to col. 3, line 62.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the blocked outlet of Fisher et al. into the arrangement of Shevlin to facilitate the flow of backflushing air through the filter elements, as suggested by Fisher et al. in col. 3, lines 1-9.

Shevlin and Fisher et al. do not disclose the outlet being selectively blocked by a flow-dynamic control element having no moving parts disposed in said clean gas outlet which permits passage of the cleaned gases out of said clean gas space but which essentially blocks passage when backflushing gas under increased pressure is admitted to said clean gas space through said flushing gas inlet.

Eggerstedt discloses a similar arrangement having a flow-dynamic control element (34) having no moving parts disposed in between said filter and the clean gas outlet which permits passage of the cleaned gases but which essentially blocks passage when backflushing gas under increased pressure is admitted to said clean gas space through said flushing gas inlet in Figs. 1-5 and col. 2, line 25 to col. 4, line 25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the flow-dynamic control element of Eggerstedt for the valve of Shevlin and Fisher et al. to provide a flow controller for regulating flow through

the outlet capable of operating at high temperatures, as suggested by Eggerstedt in col. 4, lines 13-15.

With regard to claim 7, Shevlin discloses the backflushing inlet (68) having a backflushing control valve (70) in Fig. 3 and col. 4, line 40 to col. 5, line 13.

Shevlin does not disclose said flushing gas inlet including a rapidly operating flushing gas control valve and a temperature resistant flap valve disposed between said rapidly operating flushing gas control valve and said clean air space to protect said rapidly operating flushing gas valve from excessive temperatures.

Fisher et al. discloses a similar arrangement wherein the flushing gas inlet includes a rapidly operating flushing gas control valve (25) and a temperature resistant flap valve (22) disposed between said rapidly operating flushing gas control valve and said clean air space to protect said rapidly operating flushing gas valve from excessive temperatures in Fig. 1 and col. 2, line 14 to col. 3, line 62.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the flap valve of Fisher et al. into the arrangement of Shevlin to provide a secondary control valve to terminate the backflushing in the event that the backflushing control valve sticks open.

With regard to the flap valve being for protecting the rapidly operating flushing gas valve from excessive temperature, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art

cannot be the basis for patentability when the differences would otherwise be obvious.  
See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

With regard to claims 8 and 9, Eggerstedt discloses the flow-dynamic control element (34) consisting of a honeycomb-like body with honeycomb passages extending therethrough and having cross-sections of only a few mm<sup>2</sup>, wherein said honeycomb-like body consist of a ceramic material in Figs. 1-5 and col. 2, line 25 to col. 4, line 25.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shevlin, European Patent Application EP 0 551 951 A1, Fisher et al., and Eggerstedt as applied to claim 9 above, and further in view of Ito et al.

Shevlin, European Patent Application EP 0 551 951 A1, Fisher et al., and Eggerstedt do not disclose the ceramic flow control element being made from SiC, A<sub>2</sub>O<sub>3</sub>, Cardierit, or Spinell.

Ito et al. teaches forming bodies from SiC ceramics in col. 1, lines 16-22.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the flow control element of Shevlin, European Patent Application EP 0 551 951 A1, Fisher et al., and Eggerstedt from the SiC of Ito et al. to provide an element having superior heat-resistance properties, as suggested by ITO in col. 1, lines 16-22.

**Conclusion**

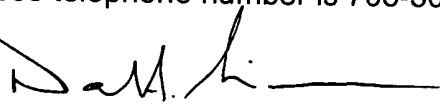
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Klimczak et al., Andersson et al., Smith, Phillippi, and Kasai et al. references disclose similar filter element cleaning methods and devices.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (703) 308-6240. The examiner can normally be reached on Tuesday - Friday (7:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons can be reached on (703) 308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jason M. Greene  
Examiner  
Art Unit 1724



David A. Simmons  
Supervisory Patent Examiner  
Technology Center 1700

jmg  
February 14, 2003